RESEARCH WITH THE ATTITUDES TOWARDS DISABLED PERSONS SCALES (ATDP)

1960-1985

Harold E. Yuker and J. R. Block
Hofstra University

CENTER FOR THE STUDY OF
ATTITUDES TOWARD PERSONS
WITH DISABILITIES

HOFSTRA
UNIVERSITY
HEMPSTEAD, NEW YORK 11550

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E R R A T U M

There is an error in the scoring instructions on page 4 of Research with the Attitudes Towards Disabled Persons scales (ATDP), 1960-1985.

We omitted instructions to change the sign of item 21 on Form A.

The instructions should read:

To summarize, scoring the ATDP involves four steps:

1) Change the signs of the following items:

Form 0: 2, 5, 6, 11, 12.
Form A: 5, 9, 12, 14, 17, 19, 21, 22, 23, 24, 25, 29.
Form B: 1, 3, 4, 6, 7, 10, 12, 13, 22, 26. 28.

The other instructions are correct.

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Harold E. Yuker and J. R. Block

Hofstra University

AMERICAN FOUNDATION FOR THE BLIND
15 WEST 16th STREET
NEW YORK, N.Y. 10011

CENTER FOR THE STUDY OF ATTITUDES TOWARD PERSONS WITH DISABILITIES

HOFSTRA UNIVERSITY

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FOREWORD

Hofstra University celebrated its 50th Anniversary in 1985. By standards for American colleges and universities that is not very old. Despite Hofstra's relative youth, it ranks in the top ten per cent of institutions of higher education in the United States by most indicators of academic excellence and quality of resources. Most appropriate to this monograph, it is clearly a leader in its concern for educational opportunities for persons with disabilities.

Hofstra's efforts to provide a quality education for all intellectually qualified students regardless of physical condition, began with a commitment from its Board of Trustees in the early 1960's -- long before the official concept of equal opportunity came into being. Since that time, as a result of grants from the Federal Government, Nassau County, individuals and foundations, all of Hofstra's 84 buildings, and 238 acre campus have been made barrier-free so that all programs and activities are accessible to disabled persons.

But people, not facilities represent the core of an accessible institution. Happily, we do not know the number of disabled students attending Hofstra. While we have facilities for counseling students who are disabled and desire such support, many disabled students conduct their business without our help or interference. They are not singled out, counted, or controlled. I believe we have almost fully integrated disabled students with those who are not disabled.

One highly visible member of our community with a disablility is my former teacher, and continuing close friend and colleague, Dr. Harold E. Yuker, co-author of this monograph. Professor Yuker has never permitted cerebral palsy to stand in the way of his professional development. He served the University as Provost and Dean of Faculties during the first five years of my tenure as President. Dr. Yuker currently is the Mervin Schloss Distinguished Professor of Psychology, and directs the center responsible for this publication.

Dr. J. R. Block, co-author of this monograph, is also my close friend and colleague. Dr. Block also was a student of Dr. Yuker's. Later, he served as chairman of the Department of Psychology at Hofstra for ten years. Professor Block is currently Assistant to the President for Information Systems. The combined service to Hofstra University from Drs. Yuker and Block amounts to 66 years.

Drs. Block and Yuker have lectured together on the subject of attitudes toward persons with disabilities in the United States, Canada, and Europe. Having attended several of their presentations, I am convinced that the excitement they generate comes not only from the content they present, but also from their long close association with one another. Their mutual affection and respect makes the medium an integral part of the message they present - that attitudes clearly overshadow and can overcome the possible negative effects of physical disability upon success.

James M. Shuart,
President,
Hofstra University

PREFACE

Over 25 years have passed since the Attitude Toward Disabled Persons scale was introduced. During this time there have been many changes in attitudes toward disabled persons. These changes are evident in laws and regulations, publications, and the growth of activism among disabled persons. They are very evident in the increased participation of disabled persons in our society. Not only do many disabled children now attend classes with nondisabled children in integrated schools, we now see persons who are disabled on city streets, in stores, shopping malls, libraries, and theaters. Many places even provide special parking areas. In this respect the United States appears to be well ahead of the rest of the world. Persons with disabilities are increasingly being judged on the basis of their abilities rather than their disability.

In the course of the 25 years, many measures of attitudes toward persons with disabilities have been developed. Most were used in only one or two studies, but a few have survived. Up to now, however, none of them have displaced the ATDP. The Center for the Study of Attitudes toward Persons with Disabilities currently receives several requests a month from people who want to use the ATDP scales. Since the monographs have long been out of print, we send them brief information about the scales and their use. Often, however, the twenty year old information is not sufficient; people want more up-to-date data. It was in response to these requests that Dr. Block and I decided to write this monograph.

We have attempted to provide a succinct summary of the research that has utilized the ATDP. We have not included a historical review of the literature, nor have we discussed studies in detail. Instead we have tried to include pertinent information about the scales, their psychometric properties, and the multitude of ways that they have been used. The documentation is extensive, and there is a lengthy bibliography. The bibliography includes all published studies of which we are aware that used the ATDP.

We hope that this publication will be of use and that persons who use the ATDP in research will inform us of their results. While we recognize the need for new and better instruments to measure attitudes toward persons with disabilities, we will continue to work with researchers as long as the ATDP remains in use.

Harold E. Yuker

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Harold E. Yuker

Chapter 1

INTRODUCTION

The Attitude Toward Disabled Persons scale (ATDP) was constructed in the late 1950s in an attempt to provide an objective, reliable, and valid measure of attitudes toward persons with physical disabilities. Most previous scales had measured attitudes toward persons with specific disabilities such as blindness or heart disease, whereas the ATDP was designed to measure attitudes toward disabled persons in general rather than toward persons with specific types of disabilities. We believed that although persons with different disabilities may be viewed as different from one another, they also may be viewed as having many important similarities. A measure which focused on the general concept of disability was considered potentially useful for attitude research. In developing the scale it was assumed that some persons perceive disabled individuals as different from and inferior to nondisabled persons.

The scale was constructed to measure the attitudes of both disabled and nondisabled persons. It can measure the attitudes of both nondisabled persons toward disabled persons and the attitudes of disabled persons toward themselves and toward other disabled individuals. Although attitudes of these two groups might reflect different cognitions, having a single instrument makes it possible to investigate both similarities and differences in the attitudes of disabled and nondisabled persons.

The first chapter of this mongraph discusses the development of the ATDP scales and contains instructions for administering, scoring, and interpreting them. The second chapter discusses the reliability and validity of the ATDP and contains extensive data detailing its correlation with several types of variables. Chapter three discusses characteristics of the scale such as social desirability, acquiescence, faking, and factorial structure, as well as adaptations, modifications, and special uses of the ATDP. The wording of the ATDP has been modified (including adaptations to measure attitudes toward specific disabilities), as has the number and type of response categories. It has been adapted for use with young children and translated into over a dozen languages.

History of the ATDP

The ATDP was introduced in a brief monograph which described the original version of the ATDP, Form O (Yuker, Block, & Campbell, 1960). In the early 1960s two alternate forms of the scale were developed and all three forms were described in The Measurement of Attitudes Toward Disabled Persons by Yuker, Block, and Younng (1966). Both monographs were published by the Human Resources Foundation.

The second monograph contained a detailed review of the literature dealing with the measurement of attitudes toward disabled persons as well as comprehensive discussions of the scales and of demographic, personality, attitudinal, and behavioral correlates of these attitudes. It contained data obtained from over 80 studies that had used the ATDP. Even though the monograph was reprinted in 1970, it has been out of print for several years. It is available only in some university libraries and by interlibrary loan from the Hofstra University Library, Hempstead, N.Y. 11550.

The third and final Human Resources publication pertaining to the ATDP was a 1974 monograph by J. R. Block. This monograph contained detailed abstracts of 35 studies conducted between 1966 and 1973 using the ATDP. It too is out of print.

The ATDP has been recognized as a major contribution to research. In 1969, Yuker, Block, and Younng received an award from the American Rehabilitation Counseling Association "in recognition of an outstanding contribution to the research literature." In 1971 Kutner stated: "The ATDP stands presently as the most widely accepted and popularly used research tool in studying attitudes toward the disabled (p. 151)."

In 1986 the ATDP is still extensively used. Its use even may be increasing. Pederson and Carlson (1981) said it is the most used measure of attitudes of rehabilitation service providers. Each month the Hofstra University Center for the Study of Attitudes Toward Persons with Disabilities receives several inquiries about the scales. The list of references published in the present monograph includes over 325 studies, about 110 of them published in the 1980s. Approximately 45% of the studies dealing with the ATDP have been journal articles, 40% doctoral dissertations, and 15% presentations at conferences or unpublished studies. The reference list in this monograph includes more than 130 dissertations and several master's theses. The number of dissertations utilizing the scale has been increasing; we are aware of over 60 completed in the 1980s.

Although copies of dissertations are sometimes difficult to obtain, bound copies of most dissertations that used the ATDP are available at the Hofstra University Library, and can be borrowed through interlibrary loan. Although dissertation results and procedures are reported in Dissertation Abstracts International, the quality and completeness of the information therein is frequently less than adequate.

Development of the Scales

Three forms of the Attitudes Toward Disabled Persons Scale (ATDP) have been developed in order to provide flexibility and permit the use of the scales in pre-post measurement designs.

The original scale, Form O (Yuker, Block, & Campbell, 1960), contains 20 items. The other two, Forms A and B, each contain 30 items (Yuker, Block, & Younng, 1966). The three forms of the ATDP are equivalent to one another and can be used interchangeably. Form O is sometimes preferred since it has fewer items and takes a little less time to complete and score.

Item selection procedures were identical for all three forms. First, a large pool of statements describing disabled persons was obtained from a review of the literature. These were screened by several psychologists to determine their pertinence. Some were discarded as inappropriate or as lacking face validity; some were changed from "positive" to "negative" wording in order to provide approximately equal numbers of positive and negative items, and some were retained in their original form. Sometimes wording was changed so that a statement originally pertaining to a specific disability such as blindness was made applicable to disabled persons in general. The initial pool of about 300 items was narrowed to preliminary groups of 40 to 60 items which were administered to classes of undergraduate students at Hofstra University.

These data were used to select items for the final scales, by applying a technique suggested by Edwards (1957b). First, high- and low-scoring groups were established on the basis of the median score obtained on the preliminary scale. These groups provided an internal criterion of the discriminative ability of each item. In selecting items for Forms A and B, an additional "external" criterion was used. For these forms, the high- and low-scoring groups were selected on the basis of both the median total score distribution of the preliminary sets of items and the median score on ATDP-O. The results of item analyses indicated that the statements successfully discriminated between persons who scored above and below the median (Yuker, Block & Younng, 1966).

Administration

The ATDP may be administered as either an individual or a group test. Persons respond to each item by indicating the extent of their agreement or disagreement according to the following scale:

+3 I agree very much
+2 I agree pretty much
+1 I agree a little
-1 I disagree a little
-2 I disagree pretty much
-3 I disagree very much

Instructions are printed at the top of the forms. Answers can be recorded either on the test forms or on computer scored sheets if appropriate answer sheets are available. The examiner may read the instructions to the group, and answer questions, but should not discuss individual items. Questions concerning specific items should be answered by suggesting the item can be interpreted any way the respondent believes appropriate. The examiner should emphasize that every item must be responded to, and that neutral responses cannot be given, i.e., there is no neutral "0" category.

Data indicate responses may be different when the person administering the ATDP is disabled (Horenstein, 1978). This topic should be investigated further.

The ATDP takes about 15 minutes to complete. In its usual form the scale requires the respondent to read and write. However, it can be responded to by persons whose disability prevents reading or writing by having someone read items to the person and/or record the responses (Morrison, 1979).

Scoring the ATDP

The ATDP can be scored by hand or by computer. With either method, the first step is to change the sign of some of the items as listed below. Next, the sum of the changed item scores is obtained. The sign of this sum is then reversed, from negative to positive or positive to negative. The total scores can range from -60 to +60 on the twenty-item scale, Form O; and from -90 to +90 on the thirty-item scales, Forms A and B. To eliminate negative values, a constant of 60 is added to the score for Form O, and a constant of 90 is added on Forms A and B. The resulting theoretical range of scores is from 0 to 120 (Form O), or from 0 to 180 (Forms A and B). High scores relative to a specific group reflect positive, accepting attitudes; relatively low scores reflect negative, rejecting attitudes.

To summarize, scoring the ATDP involves four steps:

1) Change the signs of the following items:
   Form O: 2, 5, 6, 11, 12.
   Form A: 5, 9, 12, 14, 17, 19, 22, 23, 24, 25, 29.
   Form B: 1, 3, 4, 6, 7, 10, 12, 13, 22, 26, 28.
2) Sum the scores, subtracting those with negative signs.
3) Change the sign of the sum.
4) Add 60 to the sum obtained for Form O, add 90 to the sum for Forms A and B.

The procedure for scoring Form O is illustrated in Table 1.

Table 1.
Scoring ATDP Form O

Ans.	Item	Statement
-2	1.	Parents of disabled children should be less strict than other parents.
+3	*2.	Physically disabled persons are just as intelligent as nondisabled ones.
-2	3.	Disabled people are usually easier to get along with than other people.
-3	4.	Most disabled people feel sorry for themselves.
+3	*5.	Disabled people are the same as anyone else.
-2	*6.	There should not be special schools for disabled children.
-3	7.	It would be best for disabled persons to live and work in special communities.
+1	8.	It is up to the government to take care of disabled persons.
-2	9.	Most disabled people worry a great deal.
+1	10.	Disabled people should not be expected to meet the same standards as nondisabled people.
+2	*11.	Disabled people are as happy as nondisabled ones.
+2	*12.	Severely disabled people are no harder to get along with than those with minor disabilities.
-2	13.	It is almost impossible for a disabled person to lead a normal life.
+1	14.	You should not expect too much from disabled people.
-2	15.	Disabled people tend to keep to themselves much of the time.
+1	16.	Disabled people are more easily upset than nondisabled people.
-3	17.	Disabled persons cannot have a normal social life.
-2	18.	Most disabled people feel that they are not as good as other people.
+1	19.	You have to be careful of what you say when you are with disabled people.
-3	20.	Disabled people are often grouchy.

1.	Change the sign of the starred items.	
2.	Sum the changed item scores.	-27
3.	Change the sign of the sum.	+27
4.	Add a constant of 60.	+60
5.	The result is the ATDP score.	+87

Omitted items. If a person leaves many items blank, the total ATDP score may not be valid. We recommend that if more than 10% of the items are blank (3 items on the 20-item scale or 4 on the 30-item scale) the score should be considered not valid. If 10 percent or fewer are omitted, the total score for the completed items should be used. This is equivalent to assigning a neutral value (zero) to the omitted items.

This scoring procedure and interpretation does not apply when the number of scoring categories is changed. Cessna (1967), Dickie (1967), and Mader (1967) all used four rather than six categories. Tunick (1972) used five categories including a neutral category. Furnham and Pendred (1983) used six categories with different numerical values. The use of other than six categories is not recommended because the data obtained are not comparable to other ATDP data or to the norms presented in this monograph. Even the reliability of a standardized instrument such as the ATDP may change when scoring procedures are altered.

Interpretation of ATDP scores

ATDP scores should be interpreted in terms of the operational definition of the items used in the scale, i.e., in terms of perceived differences between disabled and nondisabled persons. Thus, relatively high scores indicate the respondents perceive disabled persons as similar to nondisabled persons; low scores indicate the respondent perceives disabled persons as different from nondisabled persons.

Many items on the ATDP suggest that where a difference is perceived, the difference has negative connotations. This implies that low scores reflect the perception of disabled persons as both different and inferior or disadvantaged to some degree. Low scores imply negative attitudes.

Responses of nondisabled persons are assumed to reflect either acceptance of disabled persons or rejection/prejudice, depending on whether they perceive disabled people as similar or as different and inferior. Although Bates (1965) and Bell (1962) have been critical of this assumption, the validity data reported in Chapter 2 indicate relatively high correlations with measures of prejudice, thus supporting this interpretation.

Interpretation of the responses of disabled persons is based on the assumption that most of them respond to questions about "disabled persons" by using themselves as a frame of reference, thus providing information about both their self-perception and their perception of other disabled individuals. High scores indicate greater self-acceptance than low scores. This interpretation is validated by data indicating correlations ranging from .55 to .82 between ATDP scores and measures of acceptance of disability by disabled persons (see Table 4, page 16).

Individual item responses should not be interpreted. Total ATDP scores are meaningful, responses to individual items are not. We agree with Green (1981) who stated that individual items on a test often have a low correlation with the total score even when the test is reliable and valid. This is why criticism of one or two items on a test is unimportant. Poor items may reduce reliability, but do not distort the overall test score. If a test is reliable, one or two seemingly poor items do not matter.

As in all Likert-type scales, no absolute interpretation of raw scores is possible since the degree of the attitude expressed by each item is not known. Since Likert scales indicate the attitude of the individual relative to a normative group, interpretation requires that a score be compared to scores obtained by members of an appropriate reference group as defined by the investigator.

Normative Data

Normative data can be used to see how the scores of one particular sample of persons compare with those of other samples. Comparisons of data obtained from different groups may provide clues concerning the development of attitudes or provide information about interventions that can change attitudes. The monograph by Yuker, Block, and Younng (1966) contained several tables of norms that presented data separately for females and males, for disabled and nondisabled persons, and for each of the scales.

Both the earlier norms and the current norms indicate many differences among groups, and suggest that differences may have occurred over time. These changes may result from legislation relating to persons with disabilities, as well as the tendency toward increasing acceptance of persons who are "different." The 1966 monograph stated "It is strongly suggested that each investigator develop his own norms for the particular group with which he is working (p. 30)." This is important in view of the wide range of average scores obtained from various samples using the ATDP.

Normative data information for each form are listed in the Appendix and summarized in Table 2. Data in this table summarize the results of over 200 studies, and indicate the range of average scores, the number of studies on which they are based, and the median score obtained in the studies that have come to our attention. As discussed below, data are presented separately for males and females. Scores from intervention studies are based only on pretest norms. In some cases data from subgroups were combined and averages recalculated. All the information cited comes from studies using the ATDP without modification and scored by the standard method.

Table 2
Summary of Normative Data

Group	Range	# Studies	Median
Form 0			
Female	62.8-98.9	18	79.2
Male	62.6-95.4	17	75.1
Both	52.0-90.4	38	79.7
Form A			
Female	89.3-128.1	16	122.4
Male	84.9-136.0	16	118.7
Both	92.7-130.8	29	117.1
Form B			
Female	102.0-126.6	27	114.0
Male	87.6-126.8	27	111.2
Both	82.8-148.0	29	116.9

Table 2 summarizes the data from specific studies that are presented in Tables A-1 through A-3 in the appendix. These data are intended to be illustrative rather than complete. Norms are not presented separately for nondisabled and disabled persons because of the great variability within these groups. The tables in the appendix make it possible to compare new scores with those obtained from similar groups in earlier research.

Data presented in these tables represent a comprehensive listing of the results of studies presently available to the Center for the Study of Attitudes Toward Persons with Disabilities at Hofstra University. Revised tables will be published as additional data become available. We welcome communications from researchers who have additional data.

Gender differences have appeared in many studies that used the ATDP. As a consequence, the data in Table 2 provide separate norms for females and males. We have tabulated the results of 129 studies comparing scores obtained by males and females. Although most of these come from studies that used the ATDP, some of them used other instruments. (Only those studies that used the ATDP are summarized in Table 2.) Of the 129 studies, 109 were done on nondisabled persons in the United States, 6 on disabled persons in the United States, and 14 in foreign countries. The results indicate that 44% of the studies of nondisabled Americans showed females scoring significantly higher than males, 5% showed males scoring higher, and 51% showed no statistically significant difference. The norms in Table 2 are slightly lower for males than for females on each form of the ATDP. The lines labeled "both" in Table 2 summarize data not reported separately by gender.

Gender differences vary among countries. The data from 18 comparisons provide indications of possible trends, but are too few to draw firm conclusions. The studies indicate that in Belgium, England, and Yugoslavia women have more positive attitudes than men. In Denmark, Finland, India, Israel, Italy, Spain/Portugal, and Sri Lanka, men seem to have more positive attitudes than women. In Costa Rica, France, Japan, and Taiwan the data indicate no gender differences. It must again be stated that these conclusions are tentative.

Data indicate that in the United States gender differences have changed over time, possibly as a consequence of the trend toward equal status for women. Of 49 comparisons made before 1970, 59% showed women had more positive attitudes; 39% showed no difference. Of 25 studies performed in the 1980s, only 20% showed women having more positive attitudes; 68% showed no difference. There is a clear trend toward fewer gender differences in attitudes. At this point the important question concerns the variables that interact with gender to produce the differences that exist.

Disabled persons. Norms for disabled persons are not presented separately here as they were in the original monograph (Yuker, Block, & Younng, 1966). Separate norms originally were given because the data indicated disabled persons tended to obtain significantly higher scores on the ATDP than did nondisabled persons. This may still be the case, but there have not been many additional studies of the ATDP with disabled samples. Persons doing research on samples of disabled people can compare their results to appropriate data reported in the appendix. There does not appear to be a gender difference among persons with disabilities; five out of six studies (83%) that compared scores of disabled men and women did not find differences.

Age. The relationship between age and attitude is complex. Although ATDP scores appear to be influenced by age, the reported relationships between age and ATDP scores in adults usually can be explained by variables other than age (Yuker, Block, & Younng, 1966). The data in Table 7 (page 20) indicate that the median correlation between age and ATDP scores is only +.01. However, the correlation coefficients obtained in 15 studies ranged from -.56 to +.30, suggesting that in some cases there is either a negative or a positive relationship between age and attitudes toward persons with disabilities. It is probable, however, that these results are confounded by variables such as educational level and amount and type of contact with disabled persons.

Ryan (1981) reviewed the literature and concluded that while many studies are methodologically inadequate, they indicate attitudes tend to become more favorable from early childhood through late adolescence and then show a decline. There is

another increase from early to late adulthood followed by a decrease among the elderly. She attributed the differences to developmental variations in subjective role-taking ability.

More important from our point of view are data which indicate that the average scores reported for children in elementary and high schools tend to be below the overall medians reported in Table 2. Consequently, scores obtained by children must be interpreted with care. Furthermore, changes could appear in future studies that reflect the influence of mainstreaming in public school systems.

Education is confounded with age, particularly for persons under 25. The information in Table 7 (page 20) indicates that although the median correlation between years of education and ATDP scores is only +.09, the range is from -.03 to +.45, with five of the six studies reporting positive correlations. In view of these data, the apparently positive effects of education should be considered in interpreting ATDP scores.

Occupation may be confounded with education. While some studies reported occupational differences -- English and Oberle (1971) reported that female typists had more favorable attitudes than airline stewardesses -- the most significant question concerns the attitudes of persons who work in the helping professions. Although many people believe that persons in the helping professions (doctors, nurses, psychologists, social workers, rehabilitation personnel, etc.) have positive attitudes, the data indicate the attitudes of professional helpers are often more negative than those of lay persons (Wills, 1978).

Negative attitudes of rehabilitation personnel were reported by Chubon (1982) and Pederson and Carlson (1981). These negative attitudes may be attributed to the fact that when rehabilitation personnel interact with clients, the clients are both dependent and in an inferior status position, each condition tending to generate negative attitudes (Amir, 1969). In addition, rehabilitation personnel often see disabled clients "at their worst," which is not conducive to positive attitudes. A review of the literature by Wills (1978) concluded that professional helpers' attitudes are influenced by client characteristics such as manageability, treatability, and likeability.

Summary

The Attitudes Toward Disabled Persons scale (ATDP) consists of three alternate forms. They are Likert-type scales that can be used to measure the attitudes of either nondisabled or disabled individuals. Since their development in the early 1960s they have been used in hundreds of research studies, and are probably the most used measures of attitudes toward people who are disabled.

There are three forms of the scale; ATDP-O, which contains 20 items, and ATDP-A and ATDP-B, which each contain 30 items. Each item either expresses the concept that disabled people are, or are not similar to nondisabled people, or that they should or should not be treated the same as persons who are not disabled. The scales can be administered either individually or to groups, either in a paper-and-pencil format or orally. They can be scored either by hand or by computer.

Persons respond to each item by expressing the extent of their agreement or disagreement, choosing among six categories ranging from strongly agree to strongly disagree. There is no neutral category. The scoring procedure results in total scores that theoretically can range from zero to 120 on Form 0 and zero to 180 on Forms A and B. Comparatively low scores indicate negative attitudes, i.e., the respondent perceives disabled persons as different from, and inferior to, nondisabled persons. High scores indicate positive attitudes. As in all Likert scales, total scores do not have an absolute meaning, they should be interpreted in relation to scores obtained by other individuals with similar characteristics. While normative data have been compiled and are presented in this monograph, we recommend that investigators develop their own norms. Data indicate that ATDP scores vary as a function of demographic variables such as gender and education, and experiential variables such as type and extent of contact with disabled persons.

The interpretation of the ATDP scores of disabled persons is based on the assumption that they tend to use themselves as a frame of reference in responding to ATDP items. Their scores are assumed to reflect self-perception as well as perception of disabled persons in general. High scores obtained by disabled respondents reflect greater self-acceptance than low scores.

The 1966 monograph stated that the ATDP appears to be sufficiently reliable and valid to be a useful research tool. Data obtained in the past 20 years, which are summarized in Chapter 2, substantiate these judgments. It was also stated that the ATDP is less useful as a clinical tool used to make judgments about individuals. Persons who use the ATDP were cautioned not to interpret individual scores. These statements still are true.

Chapter 2

RELIABILITY AND VALIDITY

The adequacy of a measuring instrument is indicated by its reliability and validity. The original monograph (Yuker, Block, and Younng, 1966) presented information indicating that the ATDP is both reliable and valid. Later studies provide additional data indicating the ATDP continues to show comparatively high levels of both reliability and validity. This chapter contains a discussion of reliability and validity for both nondisabled and disabled persons.

Reliability

A major characteristic of any measuring instrument is its reliability, the extent to which measurements made with it are consistent. Reliability is particularly important in attitude scales since, as Scott (1968) has pointed out, it is difficult to arrive at a single index of validity for attitude measures. Surprisingly, the literature contains few discussions of what values constitute appropriate reliability for attitude measures, possibly because the definition of adequate reliability depends in part on the proposed use of a measure.

Although reliability is sometimes interpreted in terms of the coefficient of correlation squared, recent discussions indicate this interpretation is wrong. The interpretation should use the correlation coefficient *r*. Using *r* squared results in underestimation of the amount of common variance (Ozer, 1985).

According to Fishbein and Ajzen (1975, p.108), reliabilities of standardized attitude scales are "generally very high." Examination of the attitude scale data presented in Shaw and Wright (1967), still a basic reference source even though it is almost 20 years old, indicates that reliability coefficients are usually under .90. A tabulation of the reliability coefficients reported in Chapter 9 of that book, the chapter containing the ATDP, indicates that for 22 scales, reliability values ranged from .66 to .96 with a median of .80. This can be considered a frame of reference for the reliability of the ATDP. A coefficient of .80 accounts for 80% of the variance (Ozer, 1985).

Four procedures have been used in evaluating the reliability of the ATDP:

1) Giving the ATDP twice (test-retest reliability);
2) Dividing the test into two parts (split half reliability);
3) Correlating the results obtained from two parallel forms of the test;
4) Analyzing the covariance among individual items -- e.g., computing coefficient alpha (Stanley, 1971).

Test-retest measures of reliability involve retesting individuals with the same form of a test after an interval of time. This assumes that the variables being measured are stable and that during the time between test administrations the subjects have not had experiences which change their responses to the test items. We noted earlier that reliability reflects consistency. Test-retest reliability measures consistency over time. The data in Table 3 indicate the test-retest reliabilities for the three forms of the ATDP range from .68 to .84. For five weeks or less the medians range from .79 to .84. For longer periods the medians are lower, as would be expected. Medians based on few studies are less stable than those based on more data.

Table 3
Summary of Reliability Data

Form and type of reliability	Number of studies	Range of values	Median
Form O			
Test-retest, 5 weeks or less	8	.70-.95	.83
4 to 16 months	2	.67-.70	.68
Split half	6	.75-.85	.80
Alpha	1		.76
Form A			
Test-retest, 3 weeks or less	4	.74-.91	.79
5 months	1		.68
Split half	11	.73-.89	.83
Alpha	3	.83-.85	.84
Form B			
Test-retest, 6 weeks or less	2	.83-.85	.84
4 months	1		.71
Split half	10	.72-.91	.82
Alpha	5	.79-.89	.81
Parallel Forms (Equivalence)			
O - A	3	.61-.69	.67
O - B	4	.57-.77	.68
A - B	3	.60-.83	.72
Stability-Equivalence			
O - A	1		.62
O - B	1		.83
A - B	3	.41-.76	.73

Split-half and parallel-forms reliability are measures of equivalence that reflect the influence of the sample of items used. The items on a scale represent a sample selected from a

universe of possible items. If the sample is representative of the universe, its scores should correlate highly with those obtained from another sample drawn from the same universe. In the split-half method odd- and even-numbered items were scored separately and the correlation between the two was corrected for length, using the Spearman-Brown Prophecy formula.

An alternate approach to equivalence involves construction of two different but presumably equivalent forms of a scale. Since there are three forms of the ATDP, parallel- forms reliability could be measured. If two forms are administered at the same time and if items represent random samples drawn from the same population, there should be a high correlation between the two sets of scores.

As indicated in Table 3, the split-half reliabilities range from .72 to .91 with median values for Forms O, A, and B of .80, .83, and .81 respectively. The coefficient alpha values are very similar to the split-half values. Parallel-forms correlations range from a low of .57 to a high of .83 with the medians clustering around .68. Stability-equivalence reliability involves administering parallel forms at different times; both time and item content is varied. As a result, stability-equivalence is the most stringent approach to reliablity. As indicated in Table 3, there have been only five investigations of the reliability of the ATDP from this perspective. These correlations range from .41 to .83. with a median of .73.

These data indicate the average reliability coefficient of the ATDP scales is close to .80, which is average for widely used measures of attitudes such as those described in Shaw and Wright (1967). Each form is reliable and the three forms are roughly equivalent to one other.

Validity

Although four types of validity are often described -- content validity, predictive validity, concurrent validity, and construct validity (American Psychological Association, 1974) -- and many other types are mentioned, we agree with Messick (1980) that the most basic and meaningful type is construct validity. Construct validity assumes a theory that postulates a set of relationships between a measure and other variables.

The construct validity of the ATDP was assessed by examining the relationship of ATDP scores to scores on many other variables. On the basis of theory some of the relationships were predicted to be positive, some negative, and others orthogonal. Since most of the predictions were confirmed, and none yielded results diametrically opposed to the predictions, the ATDP may be considered a valid measure of Attitudes Toward Disabled Persons as discussed in Chapter 1.

Construct validity should include measures of both convergent and discriminant validity (Campbell & Fiske, 1958; Messick, 1980). Convergent validity was assessed by correlating ATDP scores with scores obtained on other measures of attitudes toward persons with disabilities, and on measures of constructs closely related to these attitudes. Such correlations were predicted to be relatively high. The magnitude of the correlations is a function of the similarity of the concepts underlying the ATDP and the other scales, as well as the reliability of each scale. Discriminant validity implies low correlations between the ATDP and measures of concepts that are postulated to be unrelated to these attitudes. The following sections summarize correlations obtained in studies of more than 70 different variables and indicate that the ATDP is a valid measure of attitudes towards persons who are disabled.

Validity for Scores of Nondisabled Persons

The validity studies dealing with attitudes of nondisabled persons are reported in terms of correlations with: measures of attitudes toward disabled persons in general, measures of attitudes toward specific disabilities, measures of other types of attitudes, experiential variables, demographic variables, and personality variables. The validity of the ATDP for disabled persons is discussed separately.

In testing these predictions it was anticipated that support for the hypotheses would be at moderate levels since the dependent variables are complex and reflect the interaction of several variables. Nonetheless, there should be some predictable relationships. By observing whether the relationships were significantly different from zero and in the direction predicted on the basis of theoretical considerations of attitudes toward disabled persons, it was possible to indicate the adequacy of the measuring instruments. The data presented below indicate that the ATDP gives evidence of both convergent and disciminant validity (Campbell & Fiske, 1958).

Other Measures of Attitudes Toward Persons with Disabilities. A strong indication of convergent validity is provided by correlating a test with other instruments presumed to measure the same construct. Over 50 correlations between the ATDP and other measures of attitudes toward disabled persons are summarized in Table 4. The data are arranged in descending order based on the size of the median correlation. The individual correlations ranged from .98 to .09. Many of the studies were carried out by authors who developed alternative measures since they considered the ATDP inadequate. They then used the ATDP to validate their measures! Onle a few of the measures (e.g. Linkowski's Acceptance of Disabilitry scale and Siller's DFS-G seem to still be used.

Table 4
Correlations of the ATDP with Other General Measures of Attitudes Toward Persons with Disabilities

Measure	# r's	Range	Median
ATDP with slight wording modifications, including has a handicap. Bates, 1965	4	.97-.98	.98
ATHI. Attitude Toward Handicapped Individuals. ATDP-O with handicapped instead of disabled. Lazar, 1973	3	.78-.83	.80
DAAS. Disability Attitude Adjective Scale. Downes, 1968.	9	.46-.80	.70
AATPD. Adult Attitude Toward the Physically Disabled Scale. Szuhay, 1961.	2	.66-.72	.69
Semantic Differential - disabled person.	2	.58-.68	.63
ATSDS. Attitudes Toward Severely Disabled Students. Auvenshine, 1962.	4	.52-.64	.58
AD. Acceptance of Disability Scale. Linkowski, 1969.	3	.55-.78	.57
Attitudes toward Handicapped Vocational Students. Clauser, 1983.	1		.57
DFS-G. Disability Factor Scales - General. Siller & Chipman, 1965.	3	.34-.62	.55
SADP. Scale of Attitudes Toward Disabled Persons. Antonak, 1982.	1		.54
Disability Scale of Adjustment. Bell, 1967.	1		.54
ATTDS. Attitude Toward Treatment of Disabled Students. Fonosch 1979.	1		.34
Projective Pictures Test. Granofsky, 1955.	2	.25-.37	.31
Social Distance Measures. Siller, 1964.	10	.16-.70	.26
College Facilities for Handicapped Opinionnaire. Manus & Manus, 1973.	1		.22
FCL. Feeling Check List. Siller, 1964.	7	.09-.44	.19

The size of the correlation reflects similarities between the ATDP and the other measures in structure, number of items, and response mode, as well as underlying theoretical assumptions and reliability. Correlations with measures similar to the ATDP should be high while those with dissimilar measures should be low. The data confirm these predictions. The highest correlations are between the ATDP and slightly changed ATDP type measures. The data from Bates (1965) indicate the ATDP is robust and minor changes in wording do not matter. The ATHI, Attitude Toward Handicapped Individuals scale, a slightly modified and renamed version of the ATDP (see the discussion of modifications in Chapter 3) yielded an average correlation of .80, the same as the average reliability of the ATDP. The moderate correlations of .54 to .70 are with measures similar to the ATDP in both content and format. The low correlations of .26 with social distance measures, and .19 with Siller's Feeling Check List reflect differences in content and format.

Attitudes Toward Specific Disabilities. Another indication of convergent validity is provided by correlations of the ATDP with measures of attitudes toward persons with specific disabilities. The prediction that these correlations would be positive, but not as high as those obtained from correlations with general measures, is supported by the data in Table 5. Individual correlations of ATDP scores with measures of attitudes toward specific disabilities ranged from a low of .10 to a high of .83, while the medians ranged from .17 to .44.

Table 5
Correlations of the ATDP with Attitudes Toward Persons with Specific Disabilities

Disability	# r's	Range	Median
Amputation	8	.26-.64	.38
Blindness	8	.19-.83	.32
Body deformations	2	.31-.34	.32
Cerebral palsy	2	.13-.31	.22
Cosmetic or facial scars	6	.40-.64	.44
Deafness	3	.10-.62	.22
Epilepsy	1		.70
Muscular dystrophy	2	.12-.23	.17
Paralysis	2	.17-.21	.19
Skin disorder	2	.28-.36	.32
Wheelchair	2	.60-.61	.60

The variations in the average size of the correlations is worth noting. Several interpretations are possible. On the one hand, they might indicate which disabilities people tend to think of when responding to the phrase "disabled person." On the other

hand, they might reflect some perception of the severity of the disability; i.e., the ones with the lowest correlations -- muscular dystrophy, paralysis, cerebral palsy, and deafness -- might be considered the most severe. Evidence supporting the severity hypothesis comes from data indicating that when people rank disabilities in response to questions such as "which disability would you least like to happen to you?" muscular dystrophy and cerebral palsy are considered the worst, while amputation and disabilities related to appearance are relatively more acceptable (Yuker, 1983).

These data should be interpreted with caution since most of the correlations stem from two studies. Many are based on research by Bowman (1979) and by Siller and Chipman (1965). Additional data are needed to provide evidence of convergence of results. Furthermore, there seem to be no data pertaining to the relationship between general attitudes and attitudes toward persons who are mentally ill or mentally retarded. Although there are good scales for measuring these attitudes, to our knowledge they have never been correlated with the ATDP. The Opinions on Mental Illness Scale, OMI, has been correlated with the ATDP, but it yields five separate factor scores, such as authoritarianism and benevolence, rather than a single attitude score.

Other Attitudes. Nondisabled people are assumed to respond to ATDP questions in terms of disabled people as a group. It is assumed that they tend to use disabled people in general as a frame of reference even though they might have a specific disabled person in mind when they respond. Based on this assumption, ATDP scores of nondisabled persons can be interpreted as indications of either acceptance of or prejudice toward disabled persons.

The ATDP is based upon the concept that some persons perceive disabled individuals as stereotypic members of an outgroup. They are perceived as both "different from" and "inferior to" nondisabled persons. It assumes prejudice on the part of some respondents. Gordon Allport defined prejudice as:

> an avertive or hostile attitude toward a person who belongs to a group, simply because he belongs to that group, and is therefore presumed to have the objectional qualities ascribed to the group (1958, p.8).

The ATDP assumes that some people view all disabled persons as a group, regardless of the type of disability. The word "disabled" is used in every item of the scale. Each item either explicitly or implicitly compares disabled and nondisabled persons. When the item suggests that disabled persons are inferior, agreement with the item is assumed to reflect prejudice toward (nonacceptance of) disabled persons. Disagreement with

such items or agreement with items that suggests no differences between individuals who are or are not disabled is interpreted to reflect a lack of prejudice.

If the ATDP is valid, there should be evidence of relationships consistent with theories of prejudice. It was predicted that persons with low ATDP scores (people who show prejudice or nonacceptance) would be likely to show prejudice on measures of attitudes toward other groups, while people with high ATDP scores (nonprejudiced or accepting) would show acceptance of other groups.

The data in Table 6 indicate that the ATDP reflects prejudiced attitudes. This conclusion is strongly supported by the median correlation of .44 between ATDP scores and measures of prejudice and ethnocentrism and the median correlation of .47 between the ATDP and measures of attitudes toward mainstreaming. It also is substantiated by the correlation of -.45 with measures of social restrictiveness and +.42 with mental hygiene ideology, two important components of attitudes toward persons who are considered mentally ill, as well as by the negative correlations with authoritarianism and religiosity, both of which show consistent negative relations with measures of prejudice. The last column of Table 6 indicates the percent of the correlations that were positive. These were evaluated for significance using binomial probabilities (Hayes, 1981, p.647).

Table 6
Correlations with Other Attitudes

Variable	No. Studies	Range		Median	% Positive
Authoritarianism	17	-.62	+.13	-.17	24*
Benevolence	13	-.24	+.31	+.02	54
Dogmatism	9	-.41	-.01	-.03	0**
Intellectual attitudes	8	+.09	+.46	+.17	100**
Interpersonal etiology	6	-.41	+.02	-.11	17
Job satisfaction	11	+.10	+.46	+.06	100***
Machiavellianism	9	-.37	+.13	-.10	22
Mainstreaming attitudes	3	+.44	+.52	+.47	100
Mental hygiene ideology	6	-.14	+.42	+.20	67
Prejudice/ethnocentrism	9	+.25	+.52	+.43	100**
Religiosity	4	-.35	+.31	-.17	50
Social restrictiveness	6	-.45	+.34	-.04	50

*<.05 **<.01 ***<.001

Five of the variables in Table 6 (authoritarianism, benevolence, interpersonal etiology, mental hygiene ideology, and social restrictiveness) represent aspects of the Opinions of

Mental Illness (OMI) scale (Cohen & Struening, 1963). Although one would expect moderate correlations of these variables with ATDP scores, most of them are quite low. Only mental hygiene ideology (+.20) and authoritarianism (-.17) are somewhat high. Perhaps attitudes toward persons with a physical disability and toward those with a mental illness are dissimilar. On the other hand, it is possible that if the OMI yielded a total score, the correlations would be higher. Although no one has correlated the ATDP with the ATDP modified to measure attitudes toward persons with mental illness, we predict this correlation would be relatively high.

The interpretation of ATDP scores as measures of prejudice is also supported by the data in Table 7. Measures of lack of prejudice (indicated by high ATDP scores) consistently yield positive correlations with measures of SES and education, just as they do here. Discriminant validity is indicated by the lack of correlation between ATDP scores and either age or school grades.

Table 7
Correlations with Demographic Variables

Variable	No. Studies	Range		Median	% Positive
Age	30	-.56	+.53	+.01	55
Education, years completed	11	-.09	+.45	+.11	82*
Education level, parents	2	+.14	+.18	+.16	100
Grades in school	6	-.14	+.28	-.02	33
Socioeconomic status	2	+.01	+.14	+.08	100

*<.05.

Gender is not included in the above table since correlation coefficients are seldom used in gender comparisons. We discussed gender differences in Chapter 1 and presented separate normative data for each form of the ATDP. We currently are performing a meta-analysis of data pertaining to the relationship between gender and attitudes toward disabled persons.

Data pertaining to correlations between ATDP scores and many personality variables are presented in Table 8. This remains a popular research area even though both theory and past research lead to the expectation of low correlations between attitudes and personality variables. The data support this expectation; none of the median r's is above .22. Although 31 variables have been investigated, most of them were used in fewer than 5 studies. Only 13% of the median correlations were over .20 (the highest was .22) compared to 45% that were under .10. The ranges for six of the variables were either sufficiently positive or sufficiently negative to be statistically significant.

Table 8
Correlations with Personality Variables

Variable	No. Studies	Range		Median	% Positive
Adjustment level	8	-.04	+.34	+.17	62
Androgeny	1			+.16	100
Anxiety level	25	-.93	-.02	-.15	0***
Anxiety, castration	1			-.05	0
Anxiety, death	2	-.24	-.20	-.22	0
Body concern	4	-.08	+.20	-.05	25
Ego strength	5	+.10	+.23	+.14	100*
Femininity	2	-.02	+.02	.00	50
Field dependence	5	+.02	+.20	+.05	100*
Intelligence level	16	-.28	+.38	+.14	82*
Internal control	2	+.03	+.10	+.06	100
Job satisfaction	11	+.10	+.46	+.21	100**
Masculinity	1			-.05	0
Need for achievement	7	-.13	+.18	+.07	86
Need for affiliation	6	+.02	+.18	+.10	100**
Need for aggression	13	-.34	-.03	-.13	0**
Need for autonomy	2	-.04	-.01	-.02	0
Need for change	2	-.07	+.09	+.01	50
Need for deference	1			+.21	100
Need for dependence	1			+.15	100
Need for dominance	5	-.12	+.22	+.06	80
Need for endurance	5	+.03	+.13	+.10	100*
Need for exhibition	2	-.08	+.06	-.01	50
Need for heterosexuality	2	-.17	+.09	-.04	50
Need for intraception	2	+.13	+.25	+.19	100
Need for nurturance	4	+.01	+.22	+.11	100
Need for order	1			+.17	100
Need for recognition	8	-.17	+.28	+.16	80
Need for succorance	6	-.19	-.06	-.12	0*
Repression	3	-.05	+.15	+.06	33
Security	3	+.15	+.26	+.17	100
Self-concept	37	-.40	+.48	+.00	54

*<.05. **<.01. ***<.001.

The results indicate positive relationships between ATDP scores and job satisfaction, need for affiliation, and need for endurance. There are significant negative relationships with level of anxiety, need for aggression, and need for succorance. These findings make sense in terms of the definitions of ATDP scores, providing further evidence of the validity of the ATDP. Nevertheless, these results should be interpreted with caution since many of the medians are based on a small number of studies.

The data in Table 9 indicate predictable relationships between ATDP scores and various experiential variables. ATDP scores appear to be positively related to various measures of information about disabilities. The relatively low positive median correlation with contact (.09) is not surprising in view of the complexity of the relationship between contact and attitudes (Amir, 1969) and the data indicating that some types of contact with disabled persons tend to lead to positive attitudes while other types lead to negative attitudes (Yuker, in press; Yuker, Block, and Younng, 1966).

Table 9
Correlations with Experiential and Behavioral Variables

Variable	No. Studies	Range		Median	% Positive
Contact	33	-.35	+.43	+.09	70*
Knowledge of disability	4	+.12	+.52	+.30	100
Rehabilitation effectiveness	1			-.06	0
Rehab experience, years	3	-.35	-.20	-.23	0
Time in community	2	-.43	-+.29	-.07	50

*<.05

Validity for Scores of Disabled Persons

In the studies discussed thus far, no distinction was made between the attitudes of nondisabled and disabled persons. It was assumed the two groups respond similarly. Data supporting this assumption are presented in Table 10. Althogh the few data from disabled subjects do not justify statistical analyses, examination of them indicates that in most cases the two groups demonstrate similar correlations between ATDP scores and various attitudinal, demographic, and personality variables.

When disabled persons respond to the ATDP, their responses may reflect their attitudes toward other disabled persons and/or their attitudes toward themselves, i.e., their self-acceptance. Beatrice Wright (1960, 1983) discussed acceptance of disability in the content of the value changes that must occur when a person becomes disabled. She listed four types of changes that will result in acceptance of a disability as nondevaluating: enlarging

Table 10
Correlations for Disabled versus Nondisabled Samples

Variable	Disabled # r's	Disabled Mdn.	Disabled % Pos.	NonDisabled # r's	NonDisabled Mdn.	NonDisabled % Pos.
Attitudes						
Atts. toward old people	3	+.27	100	6	+.27	100
Atts. toward dis. persons	2	+.54	100	52	+.56	100***
Authoritarianism	3	-.17	0	27	-.17	0
Benevolence	3	+.28	100	9	-.12	44
Intellectualism	3	+.23	100	5	+.14	100
Interpersonal etiology	3	-.05	33	1	-.08	0
Job satisfaction	8	+.21	100	2	+.19	100**
Mental hygiene ideology	3	+.22	100	1	+.42	100
Social restrictiveness	3	+.29	100	1	-.45	0
Demographic						
Age	7	+.02	71	22	+.01	54
Education	3	+.04	67	7	+.20	100
Socioeconomic status	1	+.01	100	1	+.14	100
Personality						
Achievement	4	+.09	100	3	+.04	67
Affiliation	3	+.12	100	3	+.11	100
Aggression	3	-.15	0	10	-.13	0
Anxiety	1	-.05	0	24	-.15	0
Endurance	3	+.10	100	2	+.06	100
Intelligence	10	+.19	80	7	+.02	86
Self-concept	6	+.16	83	31	.00	53
Succorance	3	-.11	0	3	-.14	0

<.01. *<.001.

the scope of values, subordinating physique relative to other values, containing disability effects, and transforming comparative status values into asset values. These changes were used in the development of the Acceptance of Disability measure by Linkowski (1971). The data in Table 4 (page 16) indicate that the correlations between this measure and the ATDP range from .55 to .78 with a median of .57. This convergence provides an indication that the ATDP is a valid measure of the extent to which persons who are disabled accept their disability. It gains added meaning when considered in the light of validity data indicating significant relationships between AD scores and measures of self-esteem (r=.53) as well as measures of satisfaction with social relationships (r=.34, Linkowski, 1969; Linkowski & Dunn, 1974).

Distinctions such as these lead to the prediction that the attitudes of disabled persons as reflected in ATDP scores will be related to attitudinal and psychological variables, but will not

show high relationships to disability-related variables such as the nature and extent of the disability, or the person's age at the onset of the disability. We assume that the way a person reacts to a disability is primarily a function of internalized personality and self-concept. The crucial determinant is how a person perceives his/her disability, not the "objective" characteristics of that disability. From this point of view, objective descriptions of disability are meaningless.

There are also questions concerning the nature of the relationship between ATDP scores and disability variables. We have always hypothesized that attitudes and disability variables are essentially orthogonal; i.e., the attitudes of disabled persons toward disabled people cannot be predicted from knowledge of the nature or extent of their disability.

Type of disability. Studies indicate nondisabled people sometimes respond differently to persons with different types of disabilities (Yuker, 1982). Some studies of disabled persons have focussed on personality and behavior characteristics specific to persons with different types of disabilities, although interest in these differences seems to have decreased in recent years.

In discussing six principles dealing with the relationship between disability and psychological adjustment, Shontz (1977) stated that there is no simple relationship between the properties of the physical disability and the way the person with the disability reacts. He pointed out that the disability is only one of many factors that affect the life situation of a disabled person; the influence of a disability often is relatively minor.

We have tabulated data in which persons with one type of disability were compared to disabled persons with other disabilities. Most of these data come from studies conducted at Human Resources in the early 1960s, and are described on page 54 and in Table 19 of the original monograph (Yuker, Block, & Younng, 1966). There were a total of 43 comparisons that used either t tests or chi square. Only 1 comparison was significant at the .01 level, 3 were significant at the .05 level, and 39 (90%) were not significant. These data lead to the conclusion that persons with different types of disabilities do not have different attitudes as measured by the ATDP.

Extent of disability. Many people, including some professionals, believe there is a relationship between the extent of an individual's disability and that person's attitude toward the disability; i.e., the more severe the disability the more difficult it is to accept it. Yet, as Wright (1983) has documented, this belief is not supported by the evidence. Some

data show a negative relationship between extent of disability and adjustment, some a positive relationship, and some show no relationship. There can be interesting post hoc explanations for each of these findings.

When the ATDP was first developed, we were surprised to discover that the physicians we approached were unwilling to categorize persons in terms of extent of disability. Of course, some disabilities such as blindness and deafness have comparatively objective standards. Furthermore, physicians who are employed by insurance companies or the Veterans Administration do make these judgments. As a consequence, the extent-of-disability studies at Human Resources used either objective standards or simple counts of the number of disabilities or the number of extremities affected. Again, most of the data come from studies conducted at Human Resources in the early 1960s, and are described in table 19 of the original monograph (Yuker, Block, & Younng, 1966). A total of 162 comparisons used either t tests or chi square. Of these, 20 were significant at the .01 level, 11 were significant at the .05 level, and 131 (81%) yielded nonsignificant results. Clearly, the bulk of the data indicate either no relationship or a weak relationship between the extent of a person's disability and that person's scores on the ATDP.

In contrast to the above findings of mostly nonsignificant differences in the attitudes of persons with severe disabilities compared to those with much less severe disabilities, data indicate that extent of disability may be a major influence on the initial reaction to a nondisabled person (Yuker, 1982).

Age at onset of disability. Some persons believe there is a relationship between the age at which a person becomes disabled and the comparative difficulty of adjusting to the disability. It is sometimes maintained that there are differences between persons who are congenitally disabled and those who become disabled later in life. On the other hand, Shontz (1977) stated that rather than uniformity, there are many individual differences in reactions to the onset of disability.

Two types of data are pertinent to this question: first, data from comparisons between congenitally disabled persons and those who become disabled later in life; second, studies in which age at onset of disability is correlated with measures of adjustment or attitudes. Five studies yielded correlation coefficients ranging from -.12 to +.12 with a median of .01. These data confirm the lack of relationship between ATDP scores and disability-related variables. As Wright (1983) has pointed out, the effect of the age at which disability occurs varies with the groups studied. The effect depends upon the complex interaction of personality and environmental variables.

Summary

Data indicate that the ATDP is a reliable measure. The many studies that have tested four types of reliability (test-retest, split-half, equivalence, and alpha) indicate that the overall median for the scale is approximately .80. The reliabilities are similar for each of the three forms. This value is average for widely used attitude measures.

Data indicate further that the ATDP is valid with both nondisabled and disabled populations. The measure correlates highly with other measures of attitudes toward disabled persons. When the two measures are similar in length and format, the median correlation is approximately .80, which is the same as the median reliability. When the measures are different, the correlations range from .19 to .34.

The correlations with measures of attitudes toward persons with specific disabilities, e.g., blindness or cerebral palsy, average +.32, indicating 32% common variance, and implying that there are differences between attitudes toward disabled persons and attitudes toward persons with specific disabilities. The correlations are relatively high with persons in wheelchairs, those with cosmetic disabilities or amputations, while they are low with muscular dystrophy and paralysis.

ATDP scores are relatively highly correlated with measures of prejudice and ethnocentrism (+.43) and with attitudes toward mainstreaming (+.47), as would be expected. Correlations with measures of other attitudes tend to be rather low. Somewhat surprising are the relatively low correlations between ATDP scores and scores on the Opinions of Mental Illness scale (OMI), possibly because the OMI only yields subscale scores rather than an overall value.

Correlations between the ATDP and demographic variables are low. The highest correlation based on more than two studies is +.11 between education and attitudes. The correlations between attitudes and experiential variables also are low. The highest median correlations are +.30 with knowledge of disability and -.23 between attitudes and years of rehabilitation experience. While these results are based on only a few studies, the data imply that knowledge and experience have opposite effects on attitudes.

The relationship between attitudes and personality variables has always generated interest. Despite the usual finding of low correlations, interest continues. We located studies that yielded close to 200 correlations. When the data were grouped in terms of 33 variables, 30 of the median correlations were under an absolute value of .20, and 2 of the 3 above .20 were based on only 1 or 2 correlations, which indicated they may not be

reliable. The highest stable correlation, based on 11 studies, was .21 between job satisfaction and attitudes toward persons with disabilities.

Studies of the responses of disabled persons to the ATDP indicate it is a valid measure of their attitudes. Correlations with various attitudinal, demographic, and personality variables tend to be similar for disabled and nondisabled persons. In addition, ATDP scores are relatively highly related to measures of acceptance of disability (r's range from .55 to .78). Equally indicative of validity, to us, is the fact that data indicate relatively low correlations between the attitudes of persons with disabilities and such "objective" characteristics as the type and extent of the disability.

In sum, research indicates that the ATDP scales are reliable and valid measures of attitudes toward disabled persons.

Chapter 3

ATDP CHARACTERISTICS AND MODIFICATIONS

Chapter 1 discussed the development of the ATDP scales and how to use and interpret them. Chapter 2 presented data indicating the scales are both reliable and valid, and reviewed studies of variables that have been correlated with the ATDP. This chapter will present data relating to the attributes of the ATDP scales such as their susceptibility to bias (social desirability and acquiescence) and faking, their factorial structure, the many ways in which the scales have been modified, and the translations of the scales.

Social Desirability

When the ATDP scales were developed in the early 1960s, there was some concern about the effect of response sets on reactions to attitude scale items. Both Edwards (1957a) and Couch and Keniston (1960, 1961) had questioned the validity of self-report measures, suggesting they might measure generalized attitudes of social desirability or acquiescence rather than the specific attitudes under discussion. The literature suggested that at least some respondents respond positively to items representing desirable qualities and negatively to items representing undesirable qualities.

These types of responses constitute error variance on a test such as the ATDP, which contains statements in part reflecting either socially desirable or socially undesirable attitudes toward disabled persons in our society. Similarly, since the ATDP uses a Likert scale format requiring a person to indicate a degree of agreement or disagreement, a respondent with a tendency to agree with positively worded statements independently of their content (acquiescence) could produce a score inconsistent with the construct the ATDP was designed to measure.

Many studies have obtained data pertaining to the influence of social desirability on ATDP scores. We are aware of 19 correlation coefficients obtained between 1963 and 1968 relating ATDP scores to scores on either the Edwards Social Desirability Scale or the Marlow-Crowne measure. (Apparently interest in this topic has subsided in the last 20 years.) All except two of the correlations are positive, and we suspect that those two may have resulted from nonorthodox scoring procedures. The 17 positive correlations, all of which were obtained from either high school or college populations, range from a low of .01 to a high of .35 with a median of .20. We interpret these data as indicating that ATDP scores are slightly influenced by social desirability, but it does not account for a large percent of the variance. The extent of the influence is not great enough to threaten the validity of the scores.

Acquiescence

Acquiescence refers to a tendency for respondents to give positive responses to test statements. To limit the influence of this factor on ATDP scores, an attempt was made to balance the number of positively and negatively worded items. This was not entirely successful. Since most stereotypes suggest the presence of negative characteristics in disabled persons, it was easier to construct negatively worded items. Consequently there are not an equal number of positive and negative items on the scales. Form O contains 5 positive and 15 negative items, Form A has 12 positive and 18 negative, and Form B has 11 positive and 19 negative items. This imbalance suggests that testing the ATDP for susceptibility to an acquiescent response bias is important.

After reviewing the studies available at the time, Yuker Block, and Younng (1966, p.38) concluded "acquiescence, like social desirability is not a significant component of responses on the ATDP-O." Data are now available from 26 studies in which the ATDP was correlated with various measures of acquiescence. Twenty of the 26 correlation coefficients are negative. The median coefficient equals -.10. This indicates that acquiescence is not a major influence on ATDP scores. To the extent that it is an influence, the fact that it is negative implies that it could counterbalance the positive influence of social desirability.

Faking

Faking can be a problem with self-report measures that have apparently transparent items. On a scale with some items with "obvious" answers, it should be possible for a person to create a favorable impression. It is therefore important to measure the fakeability of an attitude scale to provide an indication of the transparency of the items and the extent to which someone is able to give "correct" answers if the person wishes to do so.

Several studies of attempts tp fake scores on the ATDP have been conducted, using a variety of techniques. The most extensive study was performed by Scott and Rohrbach (1977), who used several alternative procedures to identify fakeable items, and criticized many of the procedures usually used in studies of faking. In a typical procedure, estimates of the fakeability of a test can be obtained by placing persons in a situation in which they are encouraged to respond in a way that will create a positive impression. The "faked" scores are then compared with the scores obtained under non-faking conditions. In one study, a class of 62 students took the ATDP-O under two conditions (Yuker, Block, & Campbell, 1960). The group first was asked to participate in a research project and the test was administered under standard conditions. Then they were asked to complete a second form, with instructions to:

> try to make as good an impression as possible, without making it too obvious that you were not responding honestly. Remember, try to make a good impression - whatever you think that may be.

Scores obtained under the two sets of conditions correlated +.22, which indicates the students were able to somewhat distort their scores. However, even though scores obtained under the faking conditions were higher than the initial scores, the difference was not statistically significant, indicating the test was not susceptible to faking. That is, students were not able to make their responses "fit" with the scoring key to earn significantly higher scores. On the basis of studies such as this Yuker, Block, and Younng (1966) concluded the ATDP was not fakeable.

The question of fakeability assumed importance in the late 1970s when Speakman and Kung (1979, 1980, 1982) suggested ATDP scores should be used as a criterion in selecting students for admission to physical therapy training programs. They cited their own research as well as that of Yuker, Block, and Younng (1966) to indicate that the ATDP is a valid instrument that is not fakeable. However, both Novick (1972, 1982) and Vargo and Sample (1984) expressed strong disagreement with this suggestion. Some other studies have indicated the ATDP is fakable (Scott & Rohrbach, 1977; Vargo & Semple, 1984; and Vargo, Vargo, & Semple, 1981) and some have indicated that it is not fakeable (Speakman & Hoffman, 1979).

The literature pertaining to faking on the ATDP was reviewed by Yuker (1986) who concluded that since data indicate it is possible for some persons to distort their scores (i.e., change them, but not necessarily make them more positive), the ATDP should not be used as a screening device unless it is used in conjunction with other measures in an attempt to obtain convergence. This is the same recommendation made in 1966.

Yuker also suggested that since some data indicate it is possible for knowledgeable people to distort their answers to indicate they have positive attitudes toward disabled persons, the ATDP might be used as a predictor variable rather than as a dependent variable. Thus, it might be predicted that persons who can obtain very positive scores when instructed to do so might turn out to be effective rehabilitation personnel, since they are aware of the nature of positive attitudes toward disabled persons. Alternatively, the ATDP might be used with instructions to reflect positive attitudes in order to measure the extent to which graduate students have learned what positive attitudes are in the course of their graduate training. To our knowledge, the ATDP has never been used for these purposes.

Factorial Structure

Although factor analysis was not used in constructing the ATDP, concern has been expressed about the factorial purity of the scale (Felty, 1965; Jaques & Linkowski, 1965; Siller & Chipman, 1964). This is unusual since factor analyses are seldom performed on attitude scales (Fishbein & Ajzen, 1975). Most attitude measures are evaluated in terms of validity rather than factorial purity. But, as Wesman (1968) has indicated, in the history of psychometrics specific procedures became fashionable at one time or another. During the 1960s and 1970s factor analysis was fashionable.

Two types of items were used in developing the ATDP. The two types were based on theory, rather than upon factor analysis. Some of the items refer to characteristics of people and imply that disabled persons are either similar to or different from nondisabled persons with respect to these characteristics; e.g., "Disabled persons often show less enthusiasm than non-disabled persons"; "Disabled people are less aggressive than normal people"; and "Disabled people are not as happy as non-disabled ones." Other items reflect views of how disabled persons should be treated. Examples of "treatment" items are: "People who are disabled should not have to pay income taxes"; "Employers should not be allowed to fire disabled employees"; "Disabled children should not have to compete with non-disabled children"; and "Most disabled people do not need special education."

To determine whether the two types of items were independent, responses to ten items on ATDP-O relating to "characteristics" (items 2, 3, 4, 9, 11, 12, 15, 16, 18, 20) were compared with responses to ten items relating to "treatment." When 50 randomly selected tests were scored to yield subscale scores for each set of items, the correlation between subscale scores was .46, which is significantly different from zero beyond the .01 level. Correcting for the shortened length of the scale using the Spearman-Brown formula, the correlation would be .63. Mean values for the subscales were not significantly different from one another. These data suggest the two types of items are not independent and may be considered to contribute approximately equally to the total score. Considering these results and the small number of items on each subscale, the use of separate subscales on the ATDP was considered unnecessary.

The data obtained from factor analyses of the ATDP are summarized in Table 11. Two of the studies yielded two factors, one six, and one nine. As Livneh (1982) pointed out, these differences can result from the fact that the number of factors obtained are population specific as well as being instrument specific. Problems relating to the relationship between factor analytic techniques and the number of factors extracted were cogently discussed by Hafer, Wright, & Godley (1983).

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Table 11
Factor Analyses of the ATDP

Study and sample	Factor name	% Variance
Siller & Chipman 1964	Hypersensitive-depressed	53
245 HS students	Benevolent inferiority	47
Jaques 1965	Disabled are different	14
	Social energy/work vitality	9
	Seven minor factors	30
Penzer 1968	Disabled have work probs	not given
130 disabled persons	Disabled have social probs	not given
	Disabled have similar emotional makeup	not given
	Disabled have normal social life	not given
Antonak 1980	Social compassion	74
326 coll. students	Personal insecurity	26
Livneh 1982	Coping/succumbing	33
133 grad. students	Emotional need/satisfaction	12
	Sensitivity/self consciousness	11
	Inferred morality	9
	Expected to compete	8
	Productiveness	8
Furnham & Pendred 1983	Normality	23
96 students + adults	Emotionality	10
in Great Britain	Introversion	9
	Sensitivity	7
Livneh 1983	Affective-cognitive	not given
133 grad. students	Social	not given
	Behavioral	not given

The results of these factor analyses are difficult to interpret. Researchers used different methods and found different factors. Although Furnham and Pendred said their results were similar to those of Siller and Chipman and of Antonak, both the factor names and the percent of variance explained were different. Livneh (1982) said the results of his analyses confirmed previous findings that the factorial structure of the ATDP is ambiguous and attitudes toward disabled persons are multidimensional. He suggested the ATDP should be revised. Hafer, Wright, and Godley (1983), on the other hand, stated that their data support the unidimensionality of ATDP-B and concluded it is reasonable to assume the ATDP primarily assesses a single dimension of attitudes toward disabled persons.

We continue to believe that factor analysis of the ATDP is not useful. Although it can provide insights into underlying factors which might lead to productive hypotheses, it can also result in surplus meanings, particularly when factors are viewed as "real dimensions" rather than artifacts of the specific procedures used (Cronbach & Meehl, 1955). The adequacy of the ATDP should be judged on the basis of psychometric data such as reliability and validity data rather than on the results of factor analyses. Even if the ATDP is multi-dimensional, a single summary score is useful (e.g., IQ). While theoretical discussions of the possible multidimensionality of the ATDP and the nature of its components are interesting, we fail to see the utility of factor analysis in which the results depend on the characteristics of the sample and the statistical procedure used.

Modifications

The ATDP has frequently been modified, usually to adapt it for a specific purpose. Some changes involved substituting the name of a specific disability for the phrase "disabled persons," others involved adding or deleting items, and some involved changing response categories or the ways the response categories are scored. Minor changes in wording, including using specific disability names, are assumed to have little effect on the reliability or validity of the scales. On the other hand, adding or deleting items and making major changes in wording or in the response categories represent significant changes that necessitate obtaining new reliability and validity data. When major changes are made, new psychometric data should be obtained.

Changes in wording. The most common changes involve substituting a different word for the term "disabled" in order to use the ATDP to measure attitudes toward specific disabilities. Table 12 indicates the specific disability substitutions that have come to our attention, together with references to articles reporting on modified scales.

In addition to substitution of specific disability names, the ATDP has been modified by substituting the word "handicapped" for "disabled," as discussed later in this chapter. Handlin (1981) randomly changed the order of items, which should have had little or no effect.

Adding or subtracting items. More significant changes occurred when investigators added or subtracted items. Ferketic (1964) added 20 items to form O, resulting in a 40-item scale. When both the ATDP-O and the revised scale were administered to a sample of 19 graduate students, the correlation was .70. This correlation is quite high considering the small sample, but Ferketic did not indicate whether the correlation between the instruments included identical items on each of the scales. If this is the case, the correlation is artificially high.

Table 12
ATDP Modifications to Measure Attitudes Toward Specific Groups

Disability	Study
Aged	Evans 1974.
Alcoholic	Freed 1964; Bell, Weingold & Lachin 1969; Evans 1974; McCarley 1969; Sorgen 1979.
Amputees	Elsberry 1973; Krauft et al. 1976.
Blind persons	Elsberry 1973; Furnham & Pendred 1983.
Cancer	Pinkerton & McAleer 1976; Pinkerton & Nelson 1978.
Cardiovascular	Krauft et al. 1976.
Cerebral palsied	Krauft et al. 1976.
Children in sp. ed.	Simpson, Parish, & Cook 1976.
Crippled	Forbis 1982; Freedman 1975.
Deaf/hearing impaired	Elsberry 1973; Furnham & Pendred 1983; Krauft et al. 1976; Reich, Hambleton, & Houldin 1977; Wilson 1971.
Down's Syndrome	Furnham & Pendred 1983.
Emotional problems	DeNour & Weisstub 1981.
Epilepsy	Biel 1978; Dillon 1979; Eckert 1981; Kraft et al. 1976.
Facially scarred	Elsberry 1973.
Handicapped	Bates 1965; Kruse 1981; Lazar 1973; Parker 1981; Simpson, Parish, & Cook 1976.
Heart condition	Bates 1965; Pinkerton & McAleer 1976; Pinkerton & Nelson 1978.
Laryngetomized	Killarney & Lass 1979.
Mentally handicapped	Hendlin 1981.
Mentally ill	Freed 1964.
Mentally retarded	Evans 1974; Heitzman 1982; Krauft et al. 1976; Sandler 1980.
Nervous breakdown	Bates 1965.
Orthoped. impaired	Krauft et al. 1976.
Paraplegia	Pinkerton & Nelson 1978.
Physically disabled	Cloerkes 1983; Evans 1974; Freed 1964; Hendlin 1981.
Renal failure	Pinkerton & Nelson 1978.
Spinal cord injured	Krauft et al. 1976.
Subnormal intelligence	Furnham & Pendred 1983.
Wheelchair	Bates 1965.

Felty (1965) also added 20 items. Other investigators have deleted items from the scale (e.g., Antonak, 1979, 1982; McCourt, 1963; Parker, 1981).

Sanua (1970) used ten items from the ATDP-O, "...the translation of which would represent the least difficulty, and whose meaningfulness has the greatest face validity (p. 481)." He used items 1, 2, 4, 9, 11, 13, 15, 16, 18, and 20, in translations for seven non-English-speaking countries. Although the results were item-analyzed and the score for the ten items was correlated with the total ATDP-O score, these data were not reported in the article. Antonak (1979, 1982) modified the ATDP-O by deleting from two to five items that he considered inadequate. Spinney (1979) reduced the number of items to 18, and changed the frame of reference by having the person respond to a photograph of a person in a wheelchair who was either black or white, male or female. The respondent was asked to react to persons like the one in the picture. Royster (1982) divided the ATDP into two 15-item scales.

Whenever items are added or subtracted, new reliability and validity data should be obtained since these modifications change the psychometric qualities of the scale. The modified instruments may not be as reliable or valid as the standardized measures. When the quality of the items remains constant, increasing the number of items tends to increase reliability. Scales with fewer items tend to have lower reliabilities.

Response categories. All three forms of the ATDP used the six response categories (three positive and three negative) common to most Likert-type scales. Although Likert (1932) used five categories, six have since become more common. When Yuker, Block, and Younng (1966) reduced the six categories to two, combining the three positive responses and the three negative responses, four studies yielded correlations ranging from .92 to .95 between the dichotomous and the standard scores. These results indicate that simplified scoring did not make much difference. Both Dickie (1967) and Mader (1967) used four response categories in their research.

The scales were constructed to have no neutral response category. This was done in order to force the respondent to make a choice rather than "hedging" by selecting the middle category. Data pertaining to the effect of a neutral category on reliability have not been obtained. Logic suggests that adding this category might increase reliability, but this has not been tested.

Children's ATDP. A study by Bashinsky (cited but not referenced by Mulkey, 1980) reported the ATDP scales were at a second-grade reading level according to Fry's readability graph.

The Spache Readability Formula established a 2.2 reading level. Other investigators (Simpson, Parish, & Cook, 1976) have used the regular ATDP successfully with children in the second and third grades. Since there was concern about the ability of young children to understand the ATDP, a children's version of the scale was developed by Friedman (1975). The modifications consisted of changing "disabled" to "handicapped," asking the children to circle one of six smiling or frowning faces rather than using the verbal response categories, and simplifying the vocabulary so items could be understood by persons at the fourth-grade level. Friedman also modified some statements so they would be pertinent to children; e.g., "disabled persons should not have to compete for jobs with physically normal people" was changed to "crippled children should not have to compete in school against those children who are not crippled." Although this children's version of the ATDP has been used in a few studies (e.g., Butler, 1981), and may have potential, it should be approached with caution since no data pertaining to reliability or validity have been presented.

Disability vs. Handicap

One modification of the ATDP involved substituting the word handicapped for disabled. Although many persons use the words disability and handicap interchangeably, it is possible to make a conceptual distinction between a person's physical or mental condition and the way a person is treated. One of the first to make the distinction was Hamilton (1950), who said disability refers to a condition of impairment, "physical or mental, having an objective aspect that can usually be described by a physician" (p. 17). To him, handicap refers to the obstacles a disability interposes between an individual and his or her maximum level of functioning. Every handicap is related to a disability, but not every disability results in a handicap. Similarly, Kessler (1953) defined physically handicapped persons as individuals who have physical defects which limit their capacity to work or evoke unfavorable social attitudes. A physical disability is a handicap "only when the defect causes a restriction of activity or arouses a psychological prejudice (p. 12)."

When the ATDP was constructed, disability rather than handicap was used because of the distinctions cited above. Others have preferred handicap, and modified the wording of the ATDP accordingly. This modification was first made in a doctoral dissertation by Bates (1965), and has subsequently been used in a series of studies by Lazar and his colleagues (e.g., Lazar, Orpet, & Revie, 1972; Stodden, Graves, & Lazar, 1973). Lazar even changed the name of the instrument to the Attitude Toward Handicapped Individuals scale (ATHI).

Studies indicate the correlation between the ATHI and the ATDP-O averages .80, approximately the same as the reliability of the ATDP forms. In our opinion, the ATHI should be considered as a modified form of the ATDP even though some investigators appear unaware of its relationship to the ATDP.

The use of disability to refer to limitation of function and handicap to refer to barriers encountered in the pursuit of goals conforms to general usage by such authorities as the World Health Organization (1980) and Wright (1983).

Specific Disabilities

The ATDP has been criticized (cf. Siller, 1966, 1970) because it measures attitudes toward all disabled persons rather than those with a specific disability, since there is evidence people have differing attitudes toward various types of disability. We believe, however, that while people have different attitudes toward some specific disabilities, they also have attitudes toward disabled persons in general. The extensive use of the ATDP over the past 25 years appears to provide definite evidence that they do. Prior to the development of the ATDP only measures of attitudes toward persons with specific types of disabilities existed (Yuker, Block & Younng. 1966). After the publication of the ATDP other specific disability measures were developed. In fact, as was discussed earlier, the ATDP has been modified to measure attitudes toward persons with specific disabilities by changing the wording. Data pertaining to correlations between regular ATDP scores and scores on measures of attitudes toward specific disabilities were presented in the section on validity, Chapter 2.

Because of dissatisfaction with the general concept, Siller developed the Disability Factor Scales, which measured attitudes toward specific disabilities such as amputation, blindness, and cosmetic conditions (combining acne, cross-eyedness, obesity, etc.!). Since there was overlap among the scales (Kutner, 1971), Siller ended up developing a general scale, DFS-G. This led him to conclude "the structure of attitudes toward a variety of disability conditions is organized primarily by attitudinal dimension rather than by type of condition" (1970, p. 698), thus supporting the approach used in the ATDP.

Studies also show that people can rank disabilities in terms of several hierarchies, revealing that persons with certain disabilities are more acceptable than persons with others in various interpersonal interaction situations, such as social interaction, employment, willingness to teach or to rehabilitate (Yuker, 1982).

Whether to use a general or a specific measure depends on the research question one wishes to address. To the extent that

there are attitudes toward all persons who are "physically different," a general measure is appropriate. If one wishes to investigate possible attitudinal differences as a function of a specific target group, special measures are appropriate. Even in such cases, however, it might be useful to use a generalized attitude measure to provide a frame of reference.

Translations

To our knowledge, the ATDP has been translated into the languages indicated in Table 13. Some translations involved other changes as well; e.g., Sanua (1970) used only 10 items, Cloerkes (1983) used "physically disabled" rather than "disabled." While techniques used in the development of the translations were not always discussed, a very effective one was used by Jaques, Linkowski, & Sieka (1969). They first had the ATDP translated into the foreign language by a translator, and then had a second person translate the scale from the foreign language back into English, assuring translation accuracy. Another method was used by LeCompte and LeCompte (1966), who had students proficient in both Turkish and English take the test first in one language, then, one week later in the other. The correlation was .76, which is only slightly lower than the average one week test-retest reliability of the scale, indicating the adequacy of the translation.

Table 13
Translations of the ATDP

Language	Study
Chinese	Jaques, Burleigh, & Lee 1973.
Croatian	Jordan & Boric nd; Sanua 1970.
Danish	Jaques, Linkowski, & Sieka 1969.
French	Sanua 1970.
German	Cloerkes & Wohrl 1982.
Greek	Jaques, Linkowski, & Sieka 1969.
Hebrew	Jordan & Cessna nd; Sanua 1970.
Italian	Lachal 1972; Levi 1975; Sanua 1970
Japanese	Cessna, Takasa, & Jordan, 1968. Jordan & Cessna nd; Sato, 1980.
Portuguese	Sanua 1970.
Spanish	Jordan & Friesen 1968; Meehan, 1980. Sanua 1970.
Thai	Aukayanagul 1979.
Turkish	LeCompte & LeCompte 1966.

Discussion

Studies cited in this monograph indicate the ATDP has been extensively used in the past 25 years. Despite its age, and many attempts to develop better instruments, it continues to be one of the most used measures of attitudes toward persons with disabilities. Its modifications to measure attitudes toward specific abilities and its translations into about a dozen languages have extended its uses.

Several possible limitations of the ATDP have been discussed in the literature. The ATDP is a measure of attitudes toward persons with all types of disabilities. Some researchers, e.g., Siller and Chipman (1964), believe that attitudes differ depending on the type of disability involved. As discussed earlier, there is evidence of attitudes toward disabled people in general, as well as toward people with specific types of disabilities. Research should be conducted to determine both general and specific attitudes. Furthermore, the ATDP can be, and has been, modified to measure attitudes toward persons with specific types of disabilities. This makes it possible to compare general and specific attitudes.

A second possible limitation of the ATDP is its lack of unidimensionality and factorial purity (Antonak, 1980; Livneh, 1982; Siller & Chipman, 1965). As discussed earlier, the ATDP has been factor-analyzed several times and at least some investigators (Hafer, Wright, & Godley, 1983) have concluded the ATDP is unidimensional. Furthermore, the literature does not list either unidimensionality or factorial purity as important characteristics of good attitude scales. The ATDP continues to be useful for those purposes for which it has been shown to have construct validity.

The psychometric adequacy of some ATDP items has been criticized by Antonak (1980, 1982) as well as by others who have deleted items. While one or two items might be inadequate, there is little doubt about the overall adequacy of the scales. In any event, testing procedures provide little justification for modifying scales by leaving out one or more items since this may change the reliability and validity of the measure. As cogently pointed out by Green (1981), even on good measuring instruments, individual items contain a great deal of error variance. It is the sum of individual items that provides power. Since the ATDP scales have been shown to have reliability and validity, they should be used as they are, without eliminating items.

Finally, there have been a number of suggestions that the ATDP is dated and should be revised (Antonak, 1980; Livneh, 1982) as well as suggestions that Likert-type scales have had their day and should be replaced by multidimensional scales (Antonak, in press; Schmelkin, in press). We are inclined to agree with these

criticisms and believe that a better measure is overdue. Nevertheless, until better measures are developed, we believe the many current studies that use the instrument provide evidence of its continued adequacy and utility.

Summary

Studies conducted in the 1960s indicate that ATDP scores are slightly influenced by social desirability, but the influence is small and does not threaten the validity of the scales. Nor is acquiescence a major influence on ATDP scores. To the extent that social desirability correlates positively and acquiescence correlates negatively, these two factors may cancel one another.

Interest in the extent to which ATDP scores can be faked was recently generated by the suggestion that the ATDP scales should be used in screening applicants for some types of graduate programs. The data indicate it is possible for some persons to "fake good," i.e., obtain high scores when instructed to do so. We assume that such persons have knowledge of the logic underlying the ATDP; the concept that positive accepting attitudes reflect the view that persons with disabilities are the same as persons without disabilities, and should be treated in the same way. Based on this assumption, the ATDP might be used as an exit measure at the end of training programs, to see whether professional education succeeded in teaching appropriate attitudes toward persons who are disabled. It should not be used as a screening device unless it is used as part of a battery of measures.

The factorial structure of the ATDP has been investigated, but there is little consensus concerning the major factors. There is not even agreement regarding the number of dimensions. Since we are skeptical of the utility of factor analysis, these findings do not seem relevant.

The ATDP has been modified and used to measure attitudes toward persons with specific types of disabilities ranging from alcoholics and amputees to persons in wheelchairs. These modifications are quite acceptable and apparently do not change the reliability or validity of the scales. The same seems to be true for slight changes in wording, e.g. to make the scales more easily understood by children, or using the term handicapped rather than disabled. Modifying the scales by adding or subtracting items is discouraged since this necessitates getting measures of reliability and validity on the modified scale. The same is true if there is a change in the number of response categories. The ATDP has been translated into more than a dozen languages, and used in countries throughout the world.

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Dates given for dissertations are the year the dissertation was completed, which may not be the same as the year it was published in Dissertation Abstracts. Some of the references cited in the original manual (Yuker, Block, & Younng, 1966) are no longer available to us; when they are referred to in the text, Yuker, Block, & Younng (1966) is cited as the source.

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Appendix Tables and ATDP Forms

Introduction.

The following tables present normative and reliability data pertaining to the ATDP. The normative data have been compiled from studies available at the Hofstra University Center for the Study of Attitudes toward Persons with Disabilities. They represent pretest scores, scores obtained prior to any interventions that were used. They include persons with varying levels of contact with and knowledge about disabled persons.

Data are presented separately for males and females when they are available. Combined data are presented both when the data were not analyzed by gender and when the gender of the sample was not specified. Data obtained from modified versions of the scales or modified scoring systems have not been included.

Citations of studies list only the last name of the first author, the initials of the last names of other authors, and the last two digits of the year. Thus, Adam EC 76 stands for Adam, Eve, and Cain, 1976.

The following abbreviations have been used in the tables in order to conserve space while providing maximum information.

admin	administrator
adol	adolescent
bus	business
coll	college
coord	coordinator
couns	counselor
CS	college student
dis	disabled
DP	disabled person
ed	education or educator.
elem	elementary
fam	family
GS	graduate student
HS	high school
hosp	hospitalized
integ	integregated school
JHS	junior high school
ND	nondisabled person
nrs	nurse
rehab	rehabilitation
seg	segregated
sp ed	special education
stu	student
tcr	teacher
UG	undergraduate
voc	vocational
w	with

Table A-1

Mean Scores - ATDP O

Study	Group	Females		Males	
		N	M	N	M
Meehan 80	Sixth graders	75	62.8	55	62.6
Smith M 78	UG & GS, England	224	71.3	161	70.5
Smits CE 71	UGs	79	72.6	137	70.9
Bishop 69	UGs	25	74.0	25	71.6
Yuker BY 66	various	1410	75.4	1689	72.8
Ashburn 73	rehab admins	27	76.5	121	83.8
Chesler 63	HS	177	78.4	108	73.9
Foley 78	school teachers	114	78.9	83	76.1
Yuker BY 66	dis workers	219	78.9	1079	78.8
Block 62	dis workers			81	78.8
Rosswurm 80	nursing stus	26	79.6		
Urie S 71	UGs	140	79.6	116	73.7
Conine 68	teachers	374	80.0	99	75.1
Alessandrini CY 82	UGs	230	80.3	202	73.5
Fichten HA 86	Montreal adults	38	82.7	20	76.4
Fonosch 79	higher ed faculty	56	89.2	268	81.7
Felton 75	child care trainees	7	93.0		
Kelly 82	coll coord dis stu	216	98.0	113	93.9
Dillon 77	tcrs	204	98.9	32	95.4

Table A-1 (cont'd)

Mean Scores - ATDP O

Study	Group	Females and Males N	M
Evans 74	adol offenders	20	52.0
Evans 74	HS	20	58.4
Cordaro S 69	dis adults	50	60.0
Modisette 83	4-7 grade stus	60	61.0
Lipsky 78	elem stus	95	62.8
LeCompte L 66	UGs	553	66.3
Bell S 71	hospitalized DPs	25	72.0
Furnham P. 83	British	96	72.1
Wolraich 80	pediatricians	57	73.6
Wolraich 80	pediatric stus	22	75.3
Stiff P 64	dental stus	83	75.6
Conine 68	no contact w DPs	61	76.4
Conine 68	fam member of DPs	99	77.1
Clark 78	HS principals	61	77.6
Bell S 71	DPs at rehab center	45	78.0
Conine 68	elem teachers	434	78.6
Lenhart 76	adults	90	78.9
Cortez 83	faculty members	20	79.0
McDaniel 80	voc tcrs	288	79.4
Clark 78	HS phys ed tcrs	218	79.7
Lenhart 76	rehab professionals	45	79.8
Fonosch 79	faculty w/o contact	154	79.8
Pensabene B. 73	DPs at rehab center	24	81.0
Ripley 85	CP athletes	25	81.2
Conine 68	friend of DPs	85	81.3
Lenhart 76	DPs	60	81.4
Avery 82	UGs	32	81.5
Rosswurm 80	nursing stus	57	81.8
Ashburn 73	ND	123	81.9
Wilson 83	UGs	298	82.0
Marsh 83	teachers	238	82.1
Fonosch 79	higher ed faculty	324	83.0
Conine 68	elem sp ed teachers	30	83.1
Yuker H 86	adults	50	83.3
Fonosch 79	faculty w contact	160	85.3
Ashburn 73	dis rehab admins	25	85.5
Bell S 71	non-hosp DPs	45	86.0
LeCompte L 66	Turkish UGs	212	90.4

Table A-2
Mean Scores - ATDP A.

Study	Group	Females N	Females M	Males N	Males M
Jaques LS 69	Greece	158	89.3	164	84.9
Penzer 68	dis voc clients	19	106.9	89	108.4
Jaques LS 69	Denmark	173	108.7	163	115.9
Yuker BY 66	various	405	114.2	337	106.6
January 78	UG ed majors	47	117.7	16	112.9
Jaques LS 69	various	177	120.2	181	119.4
Anderson 80	UGs	32	120.4	9	115.7
Berry 82	UGs	98	122.3	66	114.2
Levi 75	Rehab workers	49	122.6	24	118.4
Yuker BY 66	dis employees	103	123.6	191	120.4
Combs 83	personnel execs	28	124.7	96	127.8
Martin SGW 82	dis GS rehab couns	10	125.0	8	131.0
Speakman 80	Phys therapists	96	126.3	26	126.2
Livneh 82	GS couns	98	126.6	35	131.0
Martin SGW 82	GS rehab couns	69	128.0	53	136.0
Darnell 81	rehab personnel	74	128.1	73	119.0
		Females and Males			
Elliott B 83	8th graders	101	92.7		
Jaques BL 73	China	296	98.0		
Downes 68	HS	31	98.4		
Penzer 68	Black dis voc clients	54	104.6		
Wissel 81	quadriplegics	25	109.0		
Downes 68	UGs	100	109.2		
Downes 68	GS	54	110.7		
Mulkey 80	6, 9, 12 graders	195	111.8		
Downes 68	UGs	46	113.7		
Wilson A 69	UGs	80	114.0		
Downes 68	employed adults	61	114.2		
Downes 68	various	441	114.9		
Penzer 68	White dis voc clients	52	115.8		
January 78	UG ed majors	63	116.5		
Hafer N 79	UGs	18	117.1		
Downes 68	GS rehab	50	117.2		
Downes 68	UG rehab	86	117.6		
Wissel 81	paraplegics	25	118.0		
Downes 68	rehab couns	90	120.5		
Baumgartner 81	UGs	60	121.3		
Vargo VS 81	GS PT	74	121.4		
Semple VV 80	GS physical therapy	32	121.8		
Kiernan 74	UGs	179	122.9		
Elston 77	rehab personnel	235	123.2		
Keelin 82	UGs	432	123.5		
Mason 82	UG stu tcrs	53	125.8		
Yuker H 86	GS psychology	55	127.0		
Yuker H 86	rehab personnel	42	129.2		
Dailey 78	UGs	52	130.8		

Table A-3
Mean Scores - ATDP-B

Study	Group	Females N	Females M	Males N	Males M
Levi 75.	Canadians, Italian			18	87.6
Durfee 71	GS, engineering			18	93.0
Durfee 71	Med stus	2	102.0	8	100.0
English 0 71	airline stewardesses	50	102.0		
Levi 75	Canadians			30	102.5
Horenstein 78	UGs	30	103.0	21	112.2
Koyama 81	HS stus	41	103.2	48	98.7
Yamamoto W 67	UG ed majors	63	103.8	33	103.8
Durfee 71	GS, social work	14	104.0	11	110.0
Higgs 71	JHS stus	34	106.8	30	102.6
Speakman H 79	UGs	25	107.6		
Sweetland 0 nd	UGs	60	107.8	60	104.5
Webster 67	JHS stus	148	110.7	136	97.5
Novick 72	PTs + stus	140	111.6	33	105.6
Horenstein 78	UGs	52	111.8	45	113.4
Yuker BY 66	various	549	113.4	345	110.1
Higgs 71	HS stus	40	114.0	30	111.2
Howard 84	ND scientists	48	114.7	316	114.9
Moses RT nd	UGs	42	114.9	39	109.8
Saunders 69	UGs	116	116.0	114	111.9
Ellum 74	voc teachers	81	116.8	101	115.9
Durfee 71	GS, psychology	13	121.0	14	121.0
Bowman 79	stus	51	121.4	18	116.7
Yuker H 86	rehab prsnl	45	121.4	15	128.3
Carter 74	voc rehab couns	72	122.1	167	118.6
Howard 84	dis scientists	74	122.5	243	118.2
Yuker BY 66	dis workers	77	123.8	114	119.7
Horenstein 78	dis UGs	22	123.9	24	114.4
English 0 71	typists	50	125.5		
Drude 71	GS counseling	23	126.6.	37	126.8

Table A-3 cont'd
Mean Scores - ATDP-B

Study	Group	Females and Males N	M
Gozali 71	Church members	266	82.8
Hendlin 81	teachers	109	93.1
Cohen 78	UGs	74	97.6
Horenstein 78	UGs	112	103.0
Gosse S 79	7th graders	273	104.0
Murphy 75	voc teachers, seg	45	104.5
Anthony 69	camp counselors	26	105.8
Jenkins 82	UG. ed	238	108.0
Feinberg 71a	UGs	62	108.5
Feinberg 66	UGs	280	111.9.
Evans 76	UGs	60	113.3
Murphy 75	voc teachers, integ	88	114.8
Gosse S 79	11th graders	268	115.0
Peterson 77	GS sp ed	74	116.6
Hendlin 81	mainstreamed tcrs	37	116.9.
Gosse S 79	UGs	155	118.0
Carter 74	voc rehab couns	197	119.3
Oberle 76	UGs, bus admin	120	119.2
Yuker H 86	rehab personnel	31	120.8
Carter 74	dis voc rehab couns	42	121.2.
Hendlin 81	sp ed teachers	65	121.4
Ibrahim H 82	UGs	50	122.5
Jenkins 82	UGs, sp ed	195	122.9
Yuker H 86	rehab personnel	60	123.1
Anthony 69	camp couns w contact	16	127.3.
Jenkins 82	sp ed teachers	100	127.4
Yuker H 86	rehab psnl	91	127.9
Fish S 83	GS rehab couns	10	132.0
Fish S 83	dis GS rehab couns	10	148.0

Table A-4
Reliability - Form 0

Test-Retest	Sample	Interval	r
Stiff P 63	75 ND	2 weeks	.80
Knittel 63	58 ND	2 weeks	.89
Tunick 72	41 ND	2 weeks	.95
Human Resources 59	45 ND	5 weeks	.70
Human Resources 59.	37 ND	5 weeks	.76
White 73	22 UGs	5 weeks	.82
Human Resources 60.	24 ND	5 weeks	.84
Human Resources 59.	30 ND	5 weeks	.89
Yuker BC 60	76 D	4 months	.70
Yuker BC 60	132 D	18 months	.67
Stability-Equivalence.			
LeCompte L 66	212 ND	1 week Turkish-English	.76
Split Half.			
Siller C 64b	245 ND		.75
Yuker BC 60	248 D		.76
Yuker BC 60	170 ND		.78
Siller C 64b	553 ND		.83
Siller C 84b	50 ND		.84
Siller C 64b	75 ND		.85
Alpha			
Clauser 83	197 ND		.87

Table A-5
Reliability - Form A

Test-Retest	Sample	Interval	r
Brewster 65	96 UG	same day	.91
Brewster 65	96 UG	1-3 wks, 3d admin	.74
Human Resources 66	84 ND	2 weeks	.78
Brewster 65	96 UG	1-3 wks, 2d admin	.80
Semple VV 80	34 ND	5 months	.68
Split Half			
Human Resources 62	72 ND		.73
Human Resources 62	53 ND		.74
Sieka JH 73	324 ND Greece		.74
Human Resources 62	53 ND		.77
Sieka JH 73	319 ND Denmark		.77
Yuker H 86	55 ND		.83
Penzer 68	130 D		.85
Yuker H 86	42 ND		.86
Sieka JH 73	353 ND		.88
Jaques BL 73	296 ND Taiwan		.88
Human Resources 62	57 ND		.89
Coefficient Alpha			
Yuker H 86	55 ND		.83
Elston 77	235 Rehab personnel		.84
Yuker H 86	42 ND		.85

Table A-6
Reliability - Form B

Test-Retest	Sample	Interval	r
Human Resources 62	81 ND	5 weeks	.83
Ibrahim 83	50 ND	6 weeks	.85
Human Resources 61	28 ND	4 months	.71
Split Half			
Human Resources 62	42 ND		.72
Human Resources 62	50 ND		.79
Human Resources 64	50 ND		.80
Human Resources 64	139 ND		.81
America Fore 62	143 ND		.82
Murphy 75	133 ND		.82
Human Resources 62	57 ND		.84
Yuker H 86	31 ND		.84
Human Resources 64	194 D		.87
Linkowski 71	46 D		.91
Coefficient Alpha			
Murphy 75	133 ND		.79
Yuker H 86	60 ND		.79
Clauser 83	156 ND		.81
Yuker H 86	31 ND		.86
Howard 84	768 D+ND		.89

Table A-7
Reliability - Interform

Different forms	Sample	Forms, Interval	r
Human Resources 62	81 ND	0-B	.57
Human Resources 64	157 D	0-B	.60
Human Resources 62	154 D	A-B	.60
Human Resources 64	234 D	0-A	.61
Human Resources 62	72 ND	0-A	.67
Human Resources 62	132 ND	0-A	.69
Human Resources 62	84 ND	A-B	.72
Human Resources 62	40 ND	0-B	.76
Human Resources 62	40 ND	0-B	.77
Human Resources 62	57 ND	A-B	.83
Stability-Equivalence			
Human Resources 66	38 ND	0-A 2 weeks	.62
Human Resources 62	58 ND	A-B 6 weeks	.41
Human Resources 62	81 ND	0-B 6 weeks	.83
Human Resources 62	40 ND	A-B 5 months	.73
Human Resources 62	31 ND	A-B 5 months	.76

ATDP-O

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3: or -1, -2, -3: depending on how you feel in each case.

+3:	I AGREE VERY MUCH	-1:	I DISAGREE A LITTLE
+2:	I AGREE PRETTY MUCH	-2:	I DISAGREE PRETTY MUCH
+1:	I AGREE A LITTLE	-3:	I DISAGREE VERY MUCH

_____1. Parents of disabled children should be less strict than other parents.
_____ 2. Physically disabled persons are just as intelligent as nondisabled ones.
_____ 3. Disabled people are usually easier to get along with than other people.
_____ 4. Most disabled people feel sorry for themselves.
_____ 5. Disabled people are the same as anyone else.
_____ 6. There should not be special schools for disabled children.
_____ 7. It would be best for disabled persons to live and work in special communities.
_____ 8. It is up to the government to take care of disabled persons.
_____ 9. Most disabled people worry a great deal.
_____10. Disabled people should not be expected to meet the same standards as nondisabled people.
_____11. Disabled people are as happy as nondisabled ones.
_____12. Severely disabled people are no harder to get along with than those with minor disabilities.
_____13. It is almost impossible for a disabled person to lead a normal life.
_____14. You should not expect too much from disabled people.
_____15. Disabled people tend to keep to themselves much of the time.
_____16. Disabled people are more easily upset than nondisabled people.
_____17. Disabled persons cannot have a normal social life.
_____18. Most disabled people feel that they are not as good as other people.
_____19. You have to be careful of what you say when you are with disabled people.
_____20. Disabled people are often grouchy.

ATDP-A

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3: or -1, -2, -3: depending on how you feel in each case.

+3:	I AGREE VERY MUCH	-1:	I DISAGREE A LITTLE
+2:	I AGREE PRETTY MUCH	-2:	I DISAGREE PRETTY MUCH
+1:	I AGREE A LITTLE	-3:	I DISAGREE VERY MUCH

_____ 1. Disabled people are often unfriendly.
_____ 2. Disabled people should not have to compete for jobs with physically normal people.
_____ 3. Disabled people are more emotional than other people.
_____ 4. Most disabled persons are more self-conscious than other people.
_____ 5. We should expect just as much from disabled as from nondisabled persons.
_____ 6. Disabled workers cannot be as successful as other workers.
_____ 7. Disabled people usually do not make much of a contribution to society.
_____ 8. Most nondisabled people would not want to marry anyone who is physically disabled.
_____ 9. Disabled people show as much enthusiasm as other people.
_____10. Disabled persons are usually more sensitive than other people.
_____11. Severely disabled persons are usually untidy.
_____12. Most disabled people feel that they are as good as other people.
_____13. The driving test given to a disabled person should be more severe than the one given to the nondisabled.
_____14. Disabled people are usually sociable.
_____15. Disabled persons usually are not as conscientious as physically normal persons.
_____16. Severe disabled persons probably worry more about their health than those who have minor disabilities.
_____17. Most disabled persons are not dissatisfied with themselves.
_____18. There are more misfits among disabled persons than among nondisabled persons.
_____19. Most disabled persons do not get discouraged easily.
_____20. Most disabled persons resent physically normal people.
_____21. Disabled children should compete with physically normal children.
_____22. Most disabled persons can take care of themselves.
_____23. It would be best if disabled persons would live and work with nondisabled persons.
_____24. Most severely disabled people are just as ambitious as physically normal persons.

_____25. Disabled people are just as self-confident as other people.
_____26. Most disabled persons want more affection and praise than other people.
_____27. Physically disabled persons are often less intelligent than nondisabled ones.
_____28. Most disabled persons are different from nondisabled people.
_____29. Disabled persons don't want any more sympathy than other people.
_____30. The way disabled people act is irritating.

ATDP-B

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3: or -1, -2, -3: depending on how you feel in each case.

+3:	I AGREE MUCH	-1:	I DISAGREE A LITTLE
+2:	I AGREE PRETTY MUCH	-2:	I DISAGREE PRETTY MUCH
+1:	I AGREE A LITTLE	-3:	I DISAGREE VERY MUCH

_____ 1. Disabled persons are usually friendly.
_____ 2. People who are disabled should not have to pay income taxes.
_____ 3. Disabled people are not more emotional than other people.
_____ 4. Disabled persons can have a normal social life.
_____ 5. Most physically disabled persons have a chip on their shoulder.
_____ 6. Disabled workers can be as successful as other workers.
_____ 7. Very few disabled persons are ashamed of their disabilities.
_____ 8. Most people feel uncomfortable when they associate with disabled people.
_____ 9. Disabled people show less enthusiasm than nondisabled people.
_____10. Disabled people do not become upset any more easily than nondisabled people.
_____11. Disabled people are often less aggressive than normal people.
_____12. Most disabled persons get married and have children.
_____13. Most disabled persons do not worry more than anyone else.
_____14. Employers should not be allowed to fire disabled employees.
_____15. Disabled people are not as happy as nondisabled ones.
_____16. Severely disabled people are harder to get along with than are those with minor disabilities.
_____17. Most disabled people expect special treatment.
_____18. Disabled persons should not expect to lead normal lives.
_____19. Most disabled people tend to get discouraged easily.
_____20. The worst thing that could happen to a person would be for him to be very severely injured.
_____21. Disabled children should not have to compete with nondisabled children.
_____22. Most disabled people do not feel sorry for themselves.
_____23. Most disabled people prefer to work with other disabled people.
_____24. Most severely disabled persons are not as ambitious as other people.
_____25. Disabled persons are not as self-confident as physically normal persons.

_____26. Most disabled persons don't want more affection and praise than other people.
_____27. It would be best if a disabled person would marry another disabled person.
_____28. Most disabled people do not need special attention.
_____29. Disabled persons want sympathy more than other people.
_____30. Most physically disabled persons have different personalities than normal persons.

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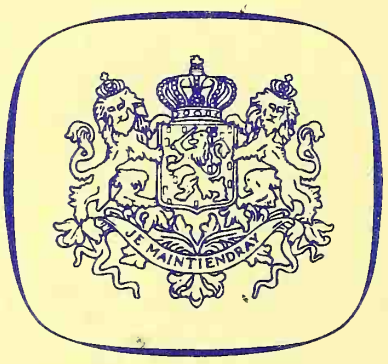
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